

# UNITED STATES PATENT OFFICE.

ALEXANDRE DE LODYGUINE, OF PARIS, FRANCE.

## MANUFACTURE OF INCANDESCENTS.

SPECIFICATION forming part of Letters Patent No. 347,164, dated August 10, 1886.

Application filed June 2, 1886. Serial No. 203,950. (No specimens.) Patented in Belgium February 5, 1885, No. 67,768; in Germany February 17, 1885, No. 34,203; in France June 8, 1885, No. 169,430, and in England June 13, 1885, No. 7,222.

*To all whom it may concern:*

Be it known that I, ALEXANDRE DE LODY-  
GUINE, a citizen of Prussia, residing at Paris,  
in the Department of the Seine, France, have  
5 invented new and useful Improvements in the  
Manufacture of Carbons for Electric Lamps  
and other Purposes, (for which I have ob-  
tained a patent in Belgium, No. 67,768, bear-  
ing date February 5, 1885; in Germany, No.  
10 34,203, bearing date February 17, 1885; in  
France, No. 169,430, bearing date June 8, 1885;  
in England, No. 7,222, bearing date June 13,  
1885,) of which the following is a specifica-  
tion.

15 This invention has for its object the produc-  
tion of carbons for electric lamps and other  
like apparatus; and it consists in the use of  
fluoride of boron and its derivatives for the  
purpose of dehydrating organic substances  
20 which contain the elements of water chemical-  
ly combined therewith. The object of this  
treatment is to obtain carbons suitable for use  
in electrical apparatus, and particularly in in-  
candescent lamps.

25 In carrying out my invention the organic  
substance is brought to the desired form, be-  
ing, for instance, divided into filaments, and  
is then subjected to the action of fluoride of  
boron, (BF<sub>3</sub>.) The reaction takes place while  
30 the substances are cold, and therefore it is not  
necessary to raise the temperature. After  
this treatment the substance is subjected to a

high temperature with exclusion of air and  
oxygen, to eliminate the fluoride of boron in  
excess, as well as the combinations which it 35  
may form. This operation may be conducted  
in any ordinary or suitable way, as in a closed  
muffle or retort, the heat being derived from  
a furnace, from an electric current, or other-  
wise. The carbon thus prepared is impreg- 40  
nated with a carburet of hydrogen—such as  
sugar or glucose, or analogous substance con-  
taining in combination the elements of water,  
(C<sup>m</sup>H<sup>2n</sup>O<sup>n</sup>.) After this the carbon is again  
45 treated with fluoride of boron and acted upon  
by heat, as before, and these operations are  
repeated until the required density and con-  
ductivity are attained.

Having thus described my invention, what I  
claim is—

50 In the manufacture of carbons for electric  
lamps and other purposes from organic sub-  
stances containing the elements of water, the  
improvement consisting in treating said or-  
ganic substance with fluoride of boron, sub- 55  
stantially as described.

In testimony whereof I have signed this  
specification in the presence of two subscrib-  
ing witnesses.

ALEXANDRE DE LODYGUINE.

Witnesses:

EMILE CANDEROS,  
F. O. JOTT.